

AMENDMENTS TO THE CLAIMS

Claims 1-5 and 11-15 remain pending in the application. Claims 6-10 and 16-20 have been cancelled. This listing of claims will replace all prior versions, and listings, of claims in this application.

LISTING OF CLAIMS

1. (Currently amended) Apparatus for a communication system in which space-time encoded data is transmitted at a first location and at least at a second location for communication to a receive station, said receive station for decoding the space-time encoded data received thereat, said ~~an~~ apparatus comprising:

a decoder coupled to receive indications of received values of the space-time encoded data received at the receive station, said decoder for directly combining the received values of the space-time encoded data transmitted from different ones of the first and at least second locations to the receive station, the received values of symbols of the space-time encoded data, once directly combined, forming a real-valued vector, free of imaginary component parts, and said decoder further for detecting actual values of the symbols of the data, based upon the real-valued vector into which the received values are directly combined.~~once combined; and~~

~~wherein the values of the space-time encoded data transmitted at the first location and values of the space-time encoded data transmitted at the second location are correlated with one another and wherein said decoder includes a matched filter for performing successive matched filter operations upon the indications of the space-time encoded data received thereat.~~

2. (Currently amended) The apparatus of claim 1 wherein the space-time encoded data transmitted at the first and at least second locations comprises a space-time encoded block of data, and wherein said decoder directly combines received values of the space-time encoded block.

3. (Currently amended) The apparatus of claim 2 wherein said decoder further forms a sequence estimate, the sequence estimate formed of a sequence of detected values of the actual symbols of the data,~~once combined.~~

4. (Original) The apparatus of claim 1 wherein the communication system comprises a radio communication system, wherein the first location at which the space-time encoded data is transmitted comprises a first antenna transducer, wherein the second location at which the space-time encoded data is transmitted comprises a second antenna transducer, the second antenna transducer spaced apart from the first antenna transducer, wherein the receive station comprises a radio receiver, and wherein said decoder is coupled to receive indications of the space-time encoded data received at the radio receiver.

5. (Currently amended) The apparatus of claim 4 wherein the space-time encoded data transmitted at the first antenna transducer is transmitted upon a first communication path to the receive station, wherein the space-time encoded data transmitted at the second antenna transducer is transmitted upon a second communication path to the receive station, wherein the receive station comprises at least one receive-antenna transducer coupled to transduce indications of the space-time encoded data transmitted upon the first and second communication paths, respectively, into electrical form, and wherein the indications of the received values of the space-time encoded data to which said decoder is coupled to receive are in electrical form, subsequent to reception at the receive-antenna transducer.

6-10. (Cancelled)

11. (Currently amended) A method for communicating in a communication system in which space-time encoded data is transmitted at a first location and at least a second location for communication to a receive station, said method for decoding the space-time encoded data, once received at the receive station, said method comprising the operations of:

directly combining received values of the space-time encoded data transmitted from different ones of the first and at least second locations to the receive station, the received values of symbols of the space-time encoded data, once directly combined, forming a real-valued vector, free of imaginary component parts;

detecting values of actual symbols of the data, once combined during said operation of directly combining received values of the space-time encoded data; and

~~wherein values of the space-time encoded data transmitted at the first location and values of the space-time encoded data transmitted at the second location are correlated to one another and wherein said method further comprises an operation of performing successive matched filter operations upon the indications of the space-time encoded data received thereat.~~

12. (Currently amended) The method of claim 11 wherein the space-time encoded data transmitted at the first and at least second locations comprises a space-time encoded block of data and wherein said operation of directly combining received values of the space-time encoded data comprises directly combining values of the space-time encoded block.

13. (Currently amended) The method of claim 12 further comprising the an operation of forming a sequence estimate, the sequence estimate formed of ~~detected~~ a sequence of values of the actual symbols of the data detected during said operation of detecting values of actual symbols of the data.

14. (Currently amended) The method of claim 11 wherein the communication system comprises a radio communication system, wherein the first location at which the space-time encoded data is transmitted comprises a first antenna transducer, wherein the second location at which the space-time encoded data is transmitted comprises a second antenna transducer, the second antenna transducer spaced apart from the first antenna transducer, wherein the receive station comprises a radio receiver, said method further comprising the operation of receiving indications of the space-time encoded data at the radio receiver prior to said operation of directly combining the received values of the space-time encoded data.

15. (Currently amended) The method of claim 14 wherein the space-time encoded data transmitted at the first antenna transducer is transmitted upon a first communication path to the receive station, wherein the space-time encoded data transmitted at the second antenna is transmitted upon a second communication path to the receive station, wherein the receive station comprises at least one receive antenna transducer and wherein said operation of receiving indications of the space-time encoded data comprises transducing said indications of the received values of the space-time encoded data transmitted upon the first and second communication paths, respectively, into electrical form.

16 -20. (Cancelled)